

Alexandru Otlacan

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EDUCATION

University of Michigan, Ann Arbor, MI

April 2027

Robotics Engineering B.S.E, Music Minor

- **Related Coursework:** Computational Linear Algebra, Human-Robot Systems, Programming and Intro Data Structures, Multivariable & Vector Calculus, Introduction to Logic Design, Robot Dynamics and Simulation, Simultaneous Localization and Mapping (SLAM) & Navigation, Intro to Logic Design, How to Build Robots and Make Them Move, Intro to Robot Control*, Human Evaluation of Robots*, Human-Computer Interaction*

Warren Mott High School and Macomb Mathematics Science Technology Center, Warren, MI

September 2019 - June 2023

GPA - 4.22

- **Extracurriculars:** Camp Restore Detroit Tutoring, National Honor Society, Warren Mott Marching Band, FIRST Robotics Team 818
- **Leadership:** Lead Scout and Design, Drum Major

EXPERIENCE

Undergraduate Research Assistant

Ann Arbor, MI

Zoetic Robotics Lab

October 2025 - Present

- Designed, prototyped, and benchmarked soft robotic mechanisms enabling multiple locomotion modes: high-speed crawling, jumping, and passive mobility
- Designed and iterated shell geometry in Fusion 360 to optimize robotic performance across FDM and SLA printing
- Conducted rapid prototyping with FDM 3D printing for microcontroller integration on ESP32C3

Mechanical and Design Robotics Mentor

Ann Arbor, MI

First Robotics Team 830 - The RatPack Robotics

January 2024 - Present

- Guided technical assistance to 30+ high school students during a two-month FRC build season, overcoming engineering, logistical, and management challenges to complete a functional robot for competition
- Trained students to utilize CNC mills and 3D printers to manufacture and optimize robot components, reducing assembly and manufacturing time by 50% by creating custom aluminum brackets and frames using Fusion 360 and OnShape
- Wrote a VBA program in Microsoft Excel to analyze match data, enhancing team strategy and contributing to a 30% increase in win rate during competition
- Optimized motion profiles and PID controllers to enhance robot precision and responsiveness

Computer Consultant Fellowship

Ann Arbor, MI

Duderstadt Ground Connection

October 2024 - Present

- Earned certifications across 8+ machineries, including Bantam CNC, Epilog Laser Engraver, FDM printers such as Bambu Labs A1 mini and P1S, Prusa Mk4s, and BigRep Studio G.2., SLA printers such as Stratasys J850 and Formlabs Form 3.
- Managed customer fabrication projects, ensuring accuracy and quality in handling parts for university and external clients
- Conducted troubleshooting and maintenance for fabrication equipment after every print, minimizing downtime and improving operational efficiency by over 50%
- Consulted high-level design feedback and quotes for customers, helping finalize part specifications, advising on material use, resolution, and cost trade-offs for 100+ projects

Lead Scout and Design

Warren, MI

FIRST Robotics Team 818 - The Steel Armadillos

October 2019 - June 2023

- Developed first version of offline scouting system, improving data collection and analysis during competition by 200%
- Designed and built a custom training device incorporating components from all shop tools, ensuring students were proficient in machining and assembly during build season

MEMBERSHIPS

Michigan Marching Band - Section Leader

August 2023 - Present

- Performed at national events, including home football games in the Big House and the Rose Bowl
- Collaborated with 400+ band members, demonstrating discipline, teamwork, and time management
- Served on the Sustainability Committee, supporting campus-wide environmental initiatives
- Hosted sectionals, office hours, and provided advice to returning and new members of section and band

SKILLS

- **Programming Languages:** C++, Python, MATLAB, Java, JavaScript, HTML, CSS, LUA
- **CAD and Design:** Autodesk Fusion 360, SolidWorks, OnShape, Rhino, Blender
- **Fabrication:** Cura, Bambu Lab Studio, Prusa Slicer, Creality Print, Materialise Magics, GrabCAD, preFORM, Asiga Composer
- **Robotics and Simulation:** ROS2, Arduino, Simulink, R
- **Machines:** CNC Mill, Bantam CNC, BigRep Studio G.2, Stratasys J850, Epilog Fusion Pro Laser Cutter/Engraver, Formlabs Form 4 Resin Printer, Prusa MK4, Creality Ender 3 V3, Asiga Max 2 UV, Asiga Ultra 32, 3D Scanner, Soldering, Sewing Machine, Cricut Maker